

Specific Comments on August 13, 1990 Draft Site Health and Safety
Program Plan

Section 1.1, Page 1-1. This section refers to the Contractor Health and Safety Plan Evaluation. This information is contained in appendix E of the Workbook not in appendix F as stated.

Section 1.2, Page 1-2. The document must address health and safety at mixed waste and radioactive waste sites as well.

Section 1.4, Description of Facility. DOE should be consistent in identifying the acreage occupied by the plant. In many documents, the facility is identified as occupying 6550 acres.

Section 1.5, Page 1-4. The number of Operable Units (OU) in the site has increased to sixteen OUs. This section should refer to the current IAG document and breakdown of OUs.

The tasks specified in the IAG also include investigation of contaminated or potentially contaminated soils, groundwater and surface water.

Section 1.6, Page 1-5. The list of volatile organic contaminants present in groundwater is not complete, and should at least include those referenced within Attachment 4 of the proposed IAG. Figures 1-1 and 1-2 are not completely legible. A map showing the location of the OUs would be helpful.

In addition to the background of the work to be performed, the project history should include or reference the history of the waste disposal activities and nature of contamination at the plant in order for the workers to understand the potential dangers of specific sites and the need to follow specified requirements.

Section 2.1, Pages 2-1 through 2-2. Figures 2-1 and 2-2 need to be updated to reflect the change in personnel.

The organizational chart for DOE must also be provided. DOE personnel responsible for health and safety programs and oversight must be provided.

A chart showing the organization of the health and safety officers and project managers is necessary. Given the problems associated with the matrix management implemented in the past for ER projects, DOE should consider bringing the authority and responsibility entirely within the ER program.

Section 2.2, Page 2-2. Personnel should be designated within this plan who have the responsibilities delineated within this section.

Section 2.2.5, Page 2-4. Either the SHSC or a second properly trained person designated by the SHSC must take responsibility for conducting site monitoring and determining if PPE levels must be upgraded based on pre-set standards which are easily measurable with the monitoring instruments on hand. This must be the designated person's primary responsibility, and a person so designated must be present within the exclusion zone at each work site whenever it is active.

Section 3.3, Page 3-3. Please explain the meaning of "available" as used in "Subcontractors are required to follow all ER SOPs when available."

Section 3.3, General. The site plans must also include information regarding the type of air monitoring and frequency of monitoring.

Standard operating procedures must be referenced or attached.

The health and safety plan only lists the requirements of a site specific plan. More detail is provided in the workbook. However, the workbook is only a guide for health and safety plans to be written by subcontractors. Therefore, it is necessary to provide more detail in the Site Health and Safety Program Plan.

The Workbook does not cover the a safety and health risk analysis for each site task and operation or site control measures.

A mechanism for requiring and tracking OSA and JSA plans is necessary and should be added to the responsibilities of the project manager or site health and safety coordinator. It is not clear who the Health and Safety Area Engineer is (i.e. is this someone separate from the health and safety coordinator?).

The health and safety aspects of Standard Operating Procedures for drilling and sampling may also be necessary.

Section 3.5, Page 3-4. Health and safety audits need to be conducted independently from the site health and safety coordinator whose responsibility is to oversee the health and safety plan on a day-to-day basis.

Site plans are also subject to inspection by CDH. The HSPP should define how audits will be documented.

Section 3.6, Page 3-4. The approval of subcontractor health and safety plans is stated to be by the liaison officer. Under section 2.2.4, the duty of the liaison officer is to coordinate approval of Site-specific health and safety plans prepared by subcontractors. The discrepancy needs to be clarified.

Section 3.6.1, Page 3-5. The Occupational Health and Fire Departments must be added to the list of reviewers. As the IAG has been revised, there is no need for allowing approximate dates for review and correcting the document.

Section 3.6.2, Page 3-6. A chart illustrating the approval scheme for health and safety plans would be beneficial.

EG&G health and safety plans must be approved by DOE.

Table 3-1. The audit questions must parallel the plan requirements listed in section 3.3. The questions provided, cover some of these items only.

Question 8 asks only if the workers are familiar with personal protective equipment but does not verify training of individuals.

Specific training and self monitoring requirements pertaining to radioactivity are not mentioned.

Section 4.0, Page 4-1. It may not be prudent to make assumptions about potential worker exposure which would predicate training requirements. Why not assume all workers may contact all types of wastes and situations? Then put all workers through the 40 hour training so that they are prepared.

Section 4.1, Page 4-1. First aid and emergency lifesaving training should be included in addition to the Health and Safety training requirements described.

Section 4.1.1, Page 4-1. EPA recommends that all employees who come into contact with or potentially come into contact with hazardous, mixed, or radioactive waste have the 40-hr. OSHA training or equivalent training.

EPA recommends that all supervisors involved with remedial actions have the 40-hr. OSHA training or equivalent.

Section 4.1.2, Page 4-3. Any necessary field training for radiation safety must be added to the basic radiation safety training. The use of field survey instrumentation and dosimetry.

Section 4.1.3, page 4-3. Although subcontractor training courses may not be reviewed by EG&G, training certification must be verified by EG&G.

Section 4.1.4, page 4-3. Hazard communication training must include any building and plant communication procedures practiced at the Rocky Flats Plant.

Section 4.1.5, Page 4-4. The HSPP must define when the Emergency Response Plan will be rehearsed.

Section 4.1.7, Page 4-5. EPA recommends daily safety briefings. They need not be elaborate, but should be conducted and attendance documented. Documentation of these meetings should be kept for SHSC and regulatory agency review.

Section 4.2, Page 4-6. The RCRA/CHWA computer training course is necessary for all employees, including subcontractors, who potentially will come into contact with hazardous or mixed waste at the Rocky Flats Plant.

The training performance evaluations need to be added to the list of responsibilities of the health and safety coordinator.

Section 4.3, Page 4-7. If audits will be performed quarterly and unannounced, this should be stated in Section 3.5 of the HSPP also.

Table 4-1, Page 4-9. Work experience should not be substituted for training. EPA recommends that any workers potentially exposed to any level of contamination complete the 40-hr. health and safety training.

Table 4-2, Page 4-10. Module 6 must include sections on biological, construction and physical hazards.

Table 4-3, Page 4-12. All supervisors should complete the 40-hr. training course and RCRA/CHWA (Colorado Hazardous Waste Act) training.

Section 5.0, Page 5-1. Medical surveillance programs should also include special medical examinations, care, and counseling in case of known or suspected exposures to toxic substances, as appropriate for the substance involved. The assumption regarding respirator usage goes hand in hand with making a conservative assumption regarding potential exposure and associated training requirements.

Section 5.1, Page 5-2. The Hazard Assessment Section of the Site Plan must be available to the consulting physicians so that they can make valid judgements pertaining to employee medical surveillance.

Section 5.2, Page 5-2. Personal dosimetry must be covered.

The medical terminology for the list of elements in the medical exam need defining.

EPA recommends complete baseline exams be performed on all employees, including subcontractors, who will potentially come into contact with hazardous, mixed or radioactive waste.

Section 5.2.1, Page 5-4. A closeout medical exam is necessary at the time the employee leaves if the employee has worked in an environment where there potential for exposure to hazardous, mixed or radioactive wastes exists. Other physical exams should also be required if the employee is suspected of being exposed to chemicals used on site, not just over-exposed.

Explain CEDE.

Section 5.2.2, Page 5-5. Medical services telephone numbers need to be posted at all jobs sites and easily found in the health and safety document.

Section 5.2.4, Page 5-6. No explanation is given on how the Medical Department will assist in health and safety planning at environmental restoration sites.

Section 5.2.5, Page 5-6. Because supervisors and employees have several responsibilities pertaining to medical surveillance, supervisors and employees need at least a basic level of first aid training. First aid training covers hazards due to electrical, heat, and cold exposures.

Section 5.2.8, Page 5-7. Personal dosimetry and body burden information must also be included in the individual employee files.

Section 6.0, Page 6-1. The hazard assessment overview (see section 1.5 Appendix A, workbook) must include:

- a list of the media in which the physio-chemical and toxic chemical hazards exist (i.e. air, water, soils);
- a list of the abbreviations used;
- radioactive hazards (not just radioactive materials);
- weather hazards (i.e. heat stroke, hypothermia);
- safety hazards (i.e. slippery or unstable surfaces, ditches, steep or uneven grades, sharp objects;
- electrical hazards (if not included in construction hazards); and
- noise hazards.

The types of toxicological references used need to be identified.

Hazards at the worksite must be identified prior to the time work commences. Hazard assessments must be updated during the project. If existing monitoring is lacking or there is no monitoring data, the HSPP must define what will be done to assess the site hazards.

Section 6.1, Page 6-2. A list of documents that will be used to evaluate the potential hazards at a site must be provided.

If summaries of IH monitoring data are applicable to a site, then the information must be included in the hazard assessment section of the site plan.

In general, this section discusses sources of information but provides no format for coordinating the information and developing a comprehensive summary of the potential hazards.

Section 6.1, Page 6-3. Chemical data sheets are included in appendix B of the workbook not appendix D as stated in this section. Also, these chemical data sheets should provide additional information on the reactivity for each specific chemical. Reactive chemicals can cause explosions or release toxic fumes with the right mixture of oxygen present in a particular environment.

Section 6.2, Page 6-4. Mixed wastes are also potential chemical contaminants.

Specific chemical hazards found at each site would need to be discussed in detail in the site specific plans. Generalized monitoring requirements are not appropriate and should not preclude Site Specific Health and Safety Plans from being more comprehensive.

Section 6.3, Page 6-6. This section should mention that radioactive materials can emit three types of harmful radiation: Alpha particles, Beta particles and gamma waves. Also, it will help to explain in more detail each form of radiation and to mention routes of exposure, the risks associated with exposure and the proper means of protection. The chemical data sheets in Appendix B should include analogous information about radionuclides.

It is incorrect to state that an acute exposure of ionizing radiation cannot happen at environmental restoration sites. Therefore, the language in the document must be changed to reflect this.

Non-qualitative descriptions of exposure levels is not informative (i.e. relatively high levels).

Section 6.4, Page 6-6. Real-time monitoring may be necessary as a screening procedure for compiling a site health and safety plan.

Methods of real-time monitoring must be listed. The HSPP must define how real-time and integrated monitoring for all hazardous substances, including radionuclides will be performed. A plan must be in place to calibrate and keep records on monitoring equipment.

Section 6.5, Page 6-8. Information about heat stress monitoring should be addressed in this plan. Heat stress monitoring techniques should include but not limited to:

Monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees fahrenheit or above. Frequency monitoring should increase as the ambient temperature increases or if slow recovery rates are indicated. When temperatures exceed 80 degrees fahrenheit workers must be monitored for heat stress after every work period.

Heart rate (HR) should be measured by counting the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. If the pulse rate is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33%.

Body temperature should be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature (OR) should not exceed 99 degrees fahrenheit. If it does, the next work period should be shortened by 10 minutes (30%), while the length of the rest period stays the same. However, if the OR exceeds 99.7 degrees fahrenheit at the beginning of the next period, the following work cycle should be further shortened by 33%. OR should be measured again at the end of the rest period to make sure it dropped below 99 degrees fahrenheit.

Body water loss (BWL) due to sweating should be measured by weighing the worker in the morning and in the evening. Preferably the worker should be nude. The scale should be accurate to plus or minus 1/4 pound. BWL should not exceed 1.5% of the total body weight. If it does, worker should be instructed to increase their daily intake of fluids to replace the water lost through perspiration.

Good hygienic standards must be maintained by frequent change of clothing and daily showering. Clothing should be permitted to dry during rest periods.

Section 6.6, Page 6-9. The last sentence on this page is incomplete.

Section 6.9, Page 6-11. This section refers to EG&G Health and Safety Practices Manual, Procedure 6.04. The respective information about entry in confined spaces contained in the mentioned document should be provided along within the Health and Safety Plan for EPA's review and comment.

Section 7.0, Page 7-1. Emergencies must also be tied into the plant-wide incident reporting plan.

Other medical emergencies to consider are exposure to a contaminant that would require immediate irrigation (i.e. eye washes or showers for exposures to acids or bases).

Section 7.1, Page 7-1. The period for rehearsal of emergency response procedures should be defined with the HSPP.

Section 7.3, Page 7-3. The HSPP should consider overexposure to hazardous substances as having the potential to initiate emergency response procedures.

Section 7.3.1, Page 7-3. Contamination of transport vehicles, medical care facilities, or medical personnel may occur and should be addressed, including proper personal protective equipment and respective decontamination procedures.

Section 7.5, Page 7-4. SARA Title III reporting requirements, where applicable, must met for all spills involving a hazardous waste or mixed waste. This section should also reference the requirements within the IAG.

Section 7.6, page 7-5.

Two-way communication should be provided at each ER site. A megaphone or bullhorn does not provide a means of immediate communication.

Section 7.7, Page 7-6. This section should establish or reference and attach procedures in cooperation with local officials for evacuating nearby residents when there is a potential threat from a given accident.

The evacuation plan procedures must be practiced as part of onsite training.

Section 7.8, Page 7-6. A complete list of emergency equipment should be attached to the safety plan. This list should include emergency equipment available on-site, as well as all available medical, rescue, transport, fire-fighting, and mitigative equipment available off-site.

SCBA units will need to be kept and maintained onsite.

A 15-minute eye wash and quick drench shower may not be long enough to rinse contaminants.

There are spelling and sentence structure problems within this section. The HSPP must define what will be required on each site with respect to emergency equipment.

Section 7.9, Page 7-7. Subcontractors and visitors must be informed of facility alarm systems prior to entering a site.